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| EXAMINER |
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NGUYEN, LAUREN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/540,486 | Applicant(s) NISHIKOUJI ET AL. | |
| | Examiner Lauren Nguyen | Art Unit 2871 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6, 7 and 9-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7 and 9-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>06/19/2007 and 09/13/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt is acknowledged of applicant's amendment filed on 06/19/2007.

Claims 5 and 8 were canceled and claims 17-20 were added. Thus, claims 1-4, 6-7, and 9-20 are pending for examination.

Response to Arguments

1. Applicant's arguments filed 06/19/2007 have been fully considered but they are not persuasive.
2. The applicant argues (see page 10) regarding the amended **claim 1** that "the positiveness and negativeness of intrinsic birefringence value does not correspond to refractive index distribution and the first retardation film having a positive intrinsic birefringence value of Aida et al does not always show predetermined refractive index distribution. This is not persuasive. The applicant may be right but this is irrelevant. **Kume et al.** teaches stretching a polymer film to obtain the uniaxial optical compensator having the principal refractive indices satisfy the inequality $n_a = n_b < n_c$ (see at least paragraphs 0076 and 0077). The examiner merely relies on **Aida et al.** for the teaching of a polymer exhibiting positive birefringence to form the birefringent B-layer to decrease the synthetic viewing angle dependency (see Office Action, page 5). In addition, the applicant states that it is preferable to stretch the laminate of the birefringent A-layer and the birefringent B-layer to obtain the desired refractive index distribution (see at least paragraph 0112). Therefore, the device would function properly as the examiner stated. The claim language therefore does not patentably distinguish over the applied reference[s], and the previous rejections are maintained.
3. Applicant's arguments with respect to **claim 1** (see page 11) have been considered but are moot in view of the new ground(s) of rejection.

Information Disclosure Statement

8. The information disclosure statements (IDS) submitted on 06/19/2007 and 09/13/2007 were filed after the mailing date of the instant application on 06/23/2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

5. **Claim 16** is objected to because of the following informalities: Claim 16 is a substantial duplicate of claims 1 and 3. Applicant is advised that should claims 1 and 3 be found allowable, claim 16 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1 3, 6-7, 10-13, 15-16, and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kume et al. (US 5,249,071)** in view of **Aida et al. (US 2003/0164920)**, further in view of **Kim et al. (US 2006/0098145)**.

8. With respect to **claim 1**, as shown in figure 1, **Kume et al.** discloses a birefringent optical film comprising: at least one birefringent A-layer (15 or 17), and at least one birefringent B-layer (16 or 19); wherein the birefringent A-layer has a property satisfying $n_{y_a} > n_{z_a} > n_{x_a}$ and the birefringent B-layer has a property satisfying $n_{x_b} = n_{y_b} > n_{z_b}$ (see at least paragraphs 0077 and 0080).

Kume et al. discloses the limitations as shown in the rejection of **claim 1** above. **Kume et al.** does not disclose the birefringent B-layer is formed of a polymer exhibiting positive birefringence and an in-plane retardation of the birefringent optical film has reciprocal wavelength dispersion characteristics.

However, **Aida et al.**, (in at least figure 3, column 3, lines 33-36 and 61-64) discloses the birefringent B-layer is formed of a polymer exhibiting positive birefringence (102, see at least column 3, lines 33-34). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent A-layer and B-layer of **Kume et al.** with the teaching of **Aida et al.** because such modification would decrease the synthetic viewing angle dependency (see at least column 3, lines 38-43).

In addition, **Kim et al.** (in at least paragraphs 0010 and 0013; figure 1A) discloses an in-plane retardation of the birefringent optical film (601 or 602) has reciprocal wavelength dispersion characteristics. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent optical film of the combination of **Kume et al./Aida et al.** with

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the biaxial plate of **Kim et al.** because such modification would secure the wide viewing angle and minimize the blue shift of a liquid crystal display device (see at least paragraph 0037).

9. With respect to **claim 3**, the combination of **Kume et al./ Kim et al.** discloses the limitations as shown in the rejection of **claim 1** above. The combination of **Kume et al./Kim et al.** does not disclose the birefringent A-layer is formed of at least one of a polymer exhibiting negative birefringence and a polymer exhibiting positive birefringence. However, **Aida et al.**, in at least figure 3, column 3, lines 33-36 and 61-64, discloses the birefringent A-layer is formed of a polymer exhibiting negative birefringence (103, see at least column 3, lines 34-36). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent A-layer and B-layer of the combination of **Kume et al./ Kim et al.** with the teaching of **Aida et al.** because such modification would decrease the synthetic viewing angle dependency (see at least column 3, lines 38-43).

10. With respect to **claim 6**, **Aida et al.** discloses the polymer exhibiting positive birefringence is polyester (see at least column 4, lines 46-50).

11. With respect to **claim 7**, **Kume et al.** discloses the limitations as shown in the rejection of **claim 1** above. **Kume et al.** does not disclose the birefringent optical film meeting a requirement represented by $-3^{\circ} \leq \text{alignment axis accuracy} \leq 3^{\circ}$. However, **Kume et al.** implicitly discloses the birefringent optical film meeting a requirement represented by $-3^{\circ} \leq \text{alignment axis accuracy} \leq 3^{\circ}$. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the alignment axis accuracy of **Kume et al.** at the time the invention was made to achieve an uniform characteristics across the display, resulting in a better display device.

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12. With respect to **claim 10**, as applied to **claim 1** above and shown in figure 1, **Kume et al.** discloses a laminated polarizing plate (12, 16, and 17; or 14, 15, and 19) comprising a birefringent optical film (15 and 19; or 16 and 17), wherein the birefringent optical film is the birefringent optical film according to claim 1.

13. With respect to **claim 11**, as applied to **claim 1** above and shown in figure 1, **Kume et al.** discloses a liquid crystal panel (6) comprising a liquid crystal cell (10, 10A, and 10B) and an optical member (15 and 19; or 16 and 17), the optical member being disposed on at least one surface of the liquid crystal cell, wherein the optical member is the birefringent optical film according to claim 1 or a laminated polarizing plate comprising the birefringent optical film according to claim 1 (figure 1).

14. With respect to **claim 12**, as applied to **claim 1** above and shown in figure 1, **Kume et al.** discloses a liquid crystal display comprising a liquid crystal panel (10, 10A, and 10B), wherein the liquid crystal panel is the liquid crystal panel according to claim 11.

15. With respect to **claim 13**, as applied to **claim 1** above and shown in figure 1, **Kume et al.** discloses an image display (6) comprising the birefringent optical film (15 and 19; or 16 and 17) according to claim 1.

16. With respect to **claim 15**, as applied to **claim 1** above and shown in figure 1, **Kume et al.** discloses the birefringent optical film according to claim 1, comprising one birefringent A-layer (15 or 17) and one birefringent B-layer (16 or 19).

17. With respect to **claim 16**, the combination of **Kume et al./ Kim et al.** discloses the limitations as shown in the rejection of **claim 1** above. The combination of **Kume et al./ Kim et al.** does not disclose the birefringent A-layer is formed of a polymer exhibiting negative birefringence and the birefringent B-layer is formed of a polymer exhibiting positive birefringence.

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However, **Aida et al.**, in at least figure 3, column 3, lines 33-36 and 61-64, discloses the birefringent A-layer is formed of a polymer exhibiting negative birefringence (103, see at least column 3, lines 34-36) and the birefringent B-layer is formed of a polymer exhibiting positive birefringence (102, see at least column 3, lines 33-34). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent A-layer and B-layer of the combination of **Kume et al./ Kim et al.** with the teaching of **Aida et al.** because such modification would decrease the synthetic viewing angle dependency (see at least column 3, lines 38-43).

18. With respect to **claim 18**, as applied to **claim 1** above and shown in figure 1, **Kume et al.** discloses the birefringent optical film is used for viewing-angle compensating films for a VA mode liquid crystal display (see at least paragraph 0086).

19. **Claims 2 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kume et al.** (US 5,249,071), **Aida et al.** (US 2003/0164920), and **Kim et al.** (US 2006/0098145) further in view of **Sakamoto et al.** (U.S. 2003/0125503).

20. With respect to **claim 2**, the combination of **Kume et al./Aida et al. /Kim et al.** discloses the limitations as shown in the rejection of **claim 1** above. The combination of **Kume et al./Aida et al. /Kim et al.** does not disclose the birefringent B-layer meets a requirement represented by $0.005 \leq \Delta n_b \leq 0.2$. However, **Sakamoto et al.**, in at least paragraph 0026, lines 15-20, discloses the birefringent B-layer meets a requirement represented by $0.004 \leq \Delta n_b \leq 0.6$. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent B-layer of the combination of **Kume et al./Aida et al. /Kim et al.** with the teaching

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of **Sakamoto et al.** because such modification would "ease the controlling of the film thickness at the time of attaching to a liquid crystal display device to obtain a retardation value" (see at least paragraph 0026, lines 24-28).

In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 2144.05

21. With respect to **claim 17**, the combination of **Kume et al./Aida et al. /Kim et al.** discloses the limitations as shown in the rejection of **claim 1** above. The combination of **Kume et al./Aida et al./Kim et al.** does not disclose the birefringent B-layer is formed of at least one polymer selected from the group consisting of polyamide, polyimide, polyetherketone, polyaryletherketone, polyamide imide and polycsterimide, and the thickness of the birefringent B-layer is 0.1 to 30 microns. However, **Sakamoto et al.**, in at least paragraphs 0028 and 0038, discloses the birefringent B-layer is formed of at least one polymer selected from the group consisting of polyamide and polyimide, and the thickness of the birefringent B-layer is 0.1 to 30 microns. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent B-layer of the combination of **Kume et al./Aida et al. /Kim et al.** with the teaching of **Sakamoto et al.** because such modification would secure excellent functions for an optical film and achieve an optical film with sufficient uniformity.

In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 2144.05

16. **Claims 4 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kume et al.** (US 5,249,071), **Aida et al.** (US 2003/0164920), and **Kim et al.** (US 2006/0098145). further in view of **Kuwabara et al.** (5,875,014).

17. With respect to **claims 4 and 14**, the combination of **Kume et al./Aida et al. /Kim et al.** discloses the limitations as shown in the rejection of **claim 3** above. The combination of **Kume et al./Aida et al. /Kim et al.** does not disclose the birefringent A-layer is formed of a mixture of the polymer exhibiting negative birefringence and the polymer exhibiting positive birefringence (**claim 4**) and the polymer exhibiting negative birefringence and the polymer exhibiting positive birefringence contained in the mixture for forming the birefringent A-layer are compatible with each other (**claim 14**).

However, **Kuwabara et al.**, in at least column 5, lines 14-20, discloses the birefringent A-layer is formed of a mixture of the polymer exhibiting negative birefringence and the polymer exhibiting positive birefringence (**claim 4**; see at least column 5, lines 16-18) and the polymer exhibiting negative birefringence and the polymer exhibiting positive birefringence contained in the mixture for forming the birefringent A-layer are compatible with each other (**claim 14**; see at least column 5, lines 40-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent A-layer of the combination of **Kume et al./Aida et al. /Kim et al.** with the teaching of **Kuwabara et al.** because such modification would achieve an excellent black-and-white display of a liquid crystal display device apparatus (see at least column 2, lines 35-38).

18. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kume et al. (US 5,249,071)**, **Aida et al. (US 2003/0164920)**, and **Kim et al. (US 2006/0098145)**, further in view of **Kaneko et al. (U.S. Patent Number 6,693,692)**.

19. With respect to **claim 9**, the combination of **Kume et al./Aida et al. /Kim et al.** discloses the limitations as shown in the rejection of **claim 1** above. The combination of **Kume et al./Aida et al. /Kim et al.** does not disclose the birefringent optical film meeting requirements represented

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by: $|\Delta_{nd_a}| \geq |\Delta_{nd_b}|$ and $\alpha_a < \alpha_b$. However, **Kaneko et al.**, in at least column 15, lines 35-39 and lines 60-64, figure 8, 9-11, and 16, discloses $|\Delta_{nd_a}| \geq |\Delta_{nd_b}|$ and (curve 32 of the birefringent A-layer > curve 31 of the birefringent B-layer).

$$\alpha_a < \alpha_b \Rightarrow \frac{\Delta_{nd_{a430nm}}}{\Delta_{nd_{a550nm}}} < \frac{\Delta_{nd_{b430nm}}}{\Delta_{nd_{b550nm}}} \Rightarrow \frac{0.52}{0.5} < \frac{0.4}{0.38} \Rightarrow 1.04 < 1.53 \text{ (figure 16)}$$

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent optical film of the combination of **Kume et al./Aida et al. /Kim et al.** with the teaching of **Kaneko et al.** because such modification would change the polarization state at every wavelength and provide an excellent black display (see at least column 0015, lines 45-47; and column 16, lines 21-25).

22. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kume et al.** (US 5,249,071), **Aida et al.** (US 2003/0164920), and **Kim et al.** (US 2006/0098145), further in view of **Van De Witte et al.** (US 6,437,843).

With respect to **claim 19**, the combination of **Kume et al./Aida et al. /Kim et al.** discloses the limitations as shown in the rejection of **claim 1** above. The combination of **Kume et al./Aida et al. /Kim et al.** does not disclose the birefringent A-layer has a property satisfying $n_{ya} > n_{za} > n_{xa}$. However, **Van De Witte et al.**, in at least column 4, lines 30-35, discloses the birefringent A-layer has a property satisfying $n_{ya} > n_{za} > n_{xa}$. Because the combination of **Kume et al./Aida et al. /Kim et al.** and **Van De Witte et al.** (US 6,437,843) teaches the birefringent optical film, it would have been obvious to one skilled in the art to substitute one birefringent layer for the other to achieve the predictable result of producing a birefringent optical film.

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23. **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kume et al. (US 5,249,071)**, **Aida et al. (US 2003/0164920)**, and **Kim et al. (US 2006/0098145)**, further in view of **VanderPloeg et al. (US 6,567,143)**.

With respect to **claim 20**, the combination of **Kume et al./Aida et al. /Kim et al.** discloses the limitations as shown in the rejection of **claim 1** above. The combination of **Kume et al./Aida et al. /Kim et al.** does not disclose the birefringent B-layer has a property satisfying $n_{xb} > n_{yb} > n_{zb}$. However, **VanderPloeg et al.**, in at least column 8, lines 49-56, discloses the birefringent B-layer has a property satisfying $n_{xb} > n_{yb} > n_{zb}$. Because the combination of **Kume et al./Aida et al. /Kim et al. and Van De Witte et al. (US 6,437,843)** teaches the birefringent optical film, it would have been obvious to one skilled in the art to substitute one birefringent layer for the other to achieve the predictable result of producing a birefringent optical film.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lauren Nguyen whose telephone number is (571) 270-1428. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lauren Nguyen

September 25, 2007


ANDREW SCHECHTER
PRIMARY EXAMINER